In building on a damp soil, having provided for the drainage of the site and its vicinity, the walls to a little above the ground-line should be built with mortar incorporated with some ingredient giving it the property of a hydraulic cement, or such as would set under water; otherwise the mortar will never properly harden, but be inclined rather to decompose, and will always facilitate the rise of damp into the walls of the superstructure. Where there does not appear imperative occasion for incurring this extra expense, and indeed in all other cases than the one named, it is well to introduce near, but out of contact with the ground, a course of some material which is of a nature much more impermeable to moisture than the generality of building materials; a thin plate of some incorrodible metal for example, or a layer of hard slates in Roman cement, or of coal-tar and sand; either of these will intercept the rise of damp. In buildings of brick, it is the more necessary to have recourse to such measures, since that material is very absorbent in its nature, draws up damp to a considerable height, and retains it for a long time. Where the walls of a building in which no such precautions have been taken, have become damp, it would have a salutary effect to dig out the earth which lies against them, and apply a coat of concrete, or Roman cement, to the parts under the ground-line, then fill in the earth again; the current would thus be effectually stemmed, and on the right side of the wall; and all short-sighted attempts to shut it out from within, by means of tarred-paper, or tea-lead, rendered unnecessary. It is plain that where water is collecting, it must either run out or run over; and if an internal coating resists the percolation, the more is the pity, since the consequence must be the rise and spread of the mischief.

But where there is a sunk basement, and indeed in all cases, the best practice is to separate the walls from the surrounding ground by open areas, more or less wide as they can be obtained. Then, interiorly, the flagging should not be laid upon the natural earth or vegetable mould, but upon a stratum of concrete, or compact layer of ashes, stone-chippings, dry lime-rubbish, or other material calculated to intercept humidity and destroy vegetative principles, a precaution which is of course equally essential under the boarded floors of the same story,—it being provided in the latter case that a clear space of 18 inches height, or more, intervene between the said finishing stratum and the floor-boards, and a thorough ventilation admitted by means of perforated iron castings in the plinth course of the external walls. Where sleeper-walls occur, little arched openings should be formed in them for the same purpose. In superior buildings this method should be adopted for the flagging as well, as being the best for insuring a perfect exemption from damp,—the slabs being of large dimensions, assorted to certain widths, laid on dwarf walls with apertures, and their cross joints joggled or rebated for mortar to prevent any upward draught. Allusion need only be here made to the necessity which there is for making the right sort of provision, in the first instance, against the leakage of parapet gutters, down-pipes—whether soil or rain-water, cisterns, tanks, drains, &c.; the gutters named demand more care than is usually bestowed on them, and indeed can scarcely be made altogether perfect; and it is frequently from some of these causes, and where there is no damp foundation to blame, that timbers are rotted, and serious mischief occasioned: here then let us urgently recommend the relinquishment of wood bond, and suggest also the invariable adoption of a method of inserting the ends of timber beams in lieu of the more common practice of building close about them. Arched recesses, larger in every way than the ends of the beam, and having stone cills flush on the face, somewhat wider than the opening, and dovetailing inwards, should be prepared in carrying up the walls; the beams when laid in their places should be held there in one or other of the following ways; irons, say 2 feet long, should be bolted or screwed against the sides at each end, and turn down into mortises in the stone cill or templet, or dowels of iron or Valentia slate (if the latter, say 3 inches square by 4 long) should be let one-half of their length into the contiguous surfaces of the beam and templet—centrally in their width and as far from the ends of the former as is compatible with the strength of the latter supposing a tendency in the walls to fall outwards, and the beam to fulfil the part of a tye. The former and more expensive method is best calulated for cases where damp, and consequently decay at the ends of the beam is to be feared, but where all other precautions have been taken, the latter, which is extremely simple, is sufficient. When it is inconvenient to place the beams at the time of carrying up the walls, there can in general be no obstacle to leaving the back of one of the recesses open that the beam may subsequently be pushed far enough through it to admit of its other end being introduced into the one opposite. This mode of placing beams provides for the circulation of air round their ends, which from the exusion there that proceeds from such vegetable moisture as happens to remain, are liable to be soonest affected; it supersedes the necessity for charring or pitching the ends, which, however excellent in cases where the timber is perfectly seasoned, is injurious where it is not so; it also affords superior facility, should any deficiency take place, for splicing or entirely replacing them.

J. W.

ROYAL INSTITUTE OF ARCHITECTS.

In the middle of last year the Institute offered medals for the best essays on the following subjects:—"On the system and principles pursued by the Gothic architects from the eleventh to the fifteenth centuries inclusive, in the embellishment by colour of the architectural members and other parts of their religious and civil edifices;" and "On the various species and qualities of slates, with an analysis of their component parts, their relative value and applicability for building purposes, and the best chemical tests for ascertaining their durability." They further offered the Soane medallion for the best design for a college in a university, of Roman or Italian architecture, with chapel, theatre, &c.; and required that the principal buildings should compose in a noble and imposing manner.

We regret to learn that, in reply to these invitations, only two essays have been received, both on the qualities of slates; and that no design has been sent in. It is extraordinary to find so little emulation amongst the rising members of the profession, as is thus rendered apparent. We shall aid in rendering widely known the subjects proposed for the ensuing year, and hope we shall have to record a more satisfactory result. The merits of the essays now submitted remain at present unknown.

At the next ordinary meeting of the Institute, which will be held in the new rooms on Monday next, a paper will be read by Mr. T. L. Donaldson, "On the history of architecture, from the building of the pyramids to the revival of Italian architecture in the sixteenth century."

Rise in the Price of Timber.—We are informed that the advance in the price of American timber, within the last twelve months, has been nearly 50 per cent. This extraordinary rise is attributed to the steady demand and the diminished stocks, caused by the great amount of shipping employed in the guano trade. The timber-carrying trade has not, for many years, been a profitable one, and though a great amount of tonnage will, no doubt, be employed next year, and tend to check the rise, still, as freights will necessarily be high, timber will, no doubt, for some time to come, command first-rate prices to the importers.—*Glasgow Courier.*

Gigantic Bronze Statue.—The *Journal des Débats* states that the gigantic head of the statue of Bavaria, a bronze statue, which is to be 68 feet high, was withdrawn from the mould in which it was cast at the royal foundry of Munich on the evening of the 14th ultimo, in presence of the king and queen of Bavaria, and a considerable number of distinguished personages. The beauty of the head of Bavaria, which is the work of the celebrated Schwanthaler, excited such enthusiasm amongst the spectators, that they joined their voices to a chorus of 300 of the Philharmonic Society of Munich, who chanted a hymn composed for the occasion by the Baron de Poissel, director of the Theatre Royal of Munich.

BUILDING SOCIETIES.

Letter V.

BY WILLOUGHBY WILSON.

We hinted in our last that we should now touch upon the *interest* charged by these societies; this, however, must briefly give place to some matters equally important in our investigations. If our readers will turn to page 589 of The Builder (vol. ii.), they will find what interest is charged per cent. per annum. For example, a man takes 4½ shares at the price of 70*l.*, making 315*l.*; for these 315*l.* he covenants to pay in time 540*l.*; but till he does so, he is charged what is called "redemption money or interest" *per* share per *month* upon the sum he gives up to the society as a *bonus* for immediate *cash*. In the case before us, he submits to a deduction of 50*l.* a share, or 225*l.* for 315 + 225 = 540. This monthly payment the poor man deems easy; the rich man finds it the nimblest element in the improvement of his capital. For it is this "interest or *redemption* money at 4*s.* a month, *i. e.* on the bonus or sum which the man did not receive; this on 4½ shares makes 18*s.* a month, which, with redemption money, 10*s.* a month, makes 3*l.* 3*s.*, or 37*l.* 16*s.* a year; but 37*l.* 16*s.* multiplied by 8½, become 321*l.* 6*s.*; so it is made to appear that the man can within even 8½ years pay off the loan with interest on the *bonus* by monthly instalments of 3*l.* 3*s.* We must not, however, omit the ground-rent, 5*l.* a year or 50*l.* in ten years, dilapidations, insurance of property, and loss of time in dancing attendance on the secretary with monthly payments, which we may here pass over, having already shewn the operation of these; nor must we omit the bonus of 225*l.*, which *must be made good eventually*, and which drags on the man's existence for some six years more than the 8½ we have alluded to above, or in all about 14½ years, as explained at large in our second letter, pages 601 to 603 of The Builder. But it is shewn, page 626, column 3, that the bonus is as much as 55*l.*; and in the same page, column 1, at the top, we quote the words of the "London and Westminster Society," which says, "the average bonus for such advances being 63*l.* 0*s.* 10*d.* per share;" so that in this case the borrower would receive in cash 56*l.* 19*s.* 2*d.*, making himself answerable for 120*l.* on each share he takes up at this practical valuation of the price current.

In the first case the man takes 70*l.* to pay 120*l.*; in the second 65*l.* to pay 120*l.*; in the third 56*l.* 19*s.* 2*d.* to pay 120*l.* in ten years; the impossibility of which has been fully demonstrated.

This constitutes what is termed *the sale of shares*, "for in full satisfaction of the share or shares he subscribes for of 120*l.* each," "he shall immediatly pay 1*l.* per share in part of the subscription money, and charges payable thereon."* Moreover, "members not wanting money are liable to be ballotted to draw their shares, or be subject to a fine;"† but in "other societies the more general plan is to give power to the directors to dispose of money not wanted by the society in some profitable manner," as in the Bridgwater Building Society, which makes "advances upon notes of hand,";‡ "as the committee shall deem most conducive to the interests of the society."—"We think it highly expedient in societies where competition is allowed, to get a good number of capitalists."§ Here then we have proof of the inference deduced in our last letter, that these are more properly speaking *Loan* than *Building Societies;* and they identify themselves with the money-lending clubs in the manufacturing districts.

Let us now consider the *security for money advanced* by the building societies. From all we can learn the property must be of "sufficient security to the society," or the borrower must find good men and true to join in their common bond for the amount advanced, the parties agreeing "to accept the said share or shares, subject to the payments, rules, and regulations" of the society.

If the party wish to build, one-half of the money shall be advanced when the building is covered in on paying half the premium; and the other half when the premises are finished, on paying the residue of the premium: but if

* Tring Benefit Building Society, pp. 46, 47.
† Idem, p. 48.
‡ Bridgwater Benefit Building Society's Rules—*Investment of Undisposable Funds.*
§ Kerr's Building Societies, p. 52.

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